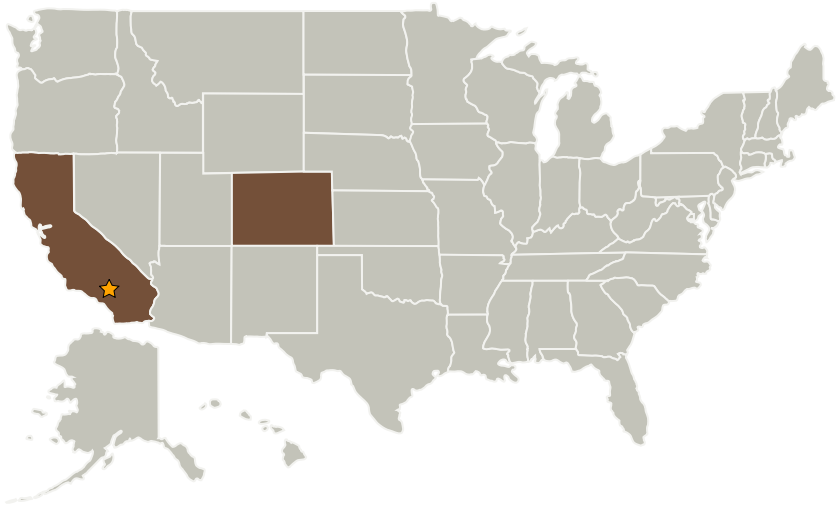
Vibrating Wingstroke Mechanism, Phase I

Completed Technology Project (2005 - 2005)

Project Introduction

This proposed work will develop a new method and mechanism for generating wing stroke motion of any shape and orientation. The mechanism will provide power, lift and flight control to small aircraft in a single integrated unit. The key innovation is the means by which wing motion is generated without the use any complex mechanical components. Wing motion of any shape and orientation can be generated with this mechanism. The arrangement of wings is such that the mechanism is mechanically balanced and exerts no net torque or force on the aircraft. This method is applicable to small UAVs (uninhabited aerial vehicles) and will provide them with a simple and reliable means of producing power, lift and flight control. The versatility of this mechanism is expected to provide UAVs with high maneuverability. This method will be most valuable for UAVs that are used as planetary aircraft as well as for general surveillance and reconnaissance.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California
Fluid Flow Technologies, L.L.C.	Supporting Organization	Industry	Evergreen, Colorado

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
California	Colorado

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Greg Glatzmaier

Technology Areas

Primary:

- TX15 Flight Vehicle Systems
  - TX15.1 Aerosciences
    - TX15.1.6 Advanced Atmospheric Flight Vehicles